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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,790	11/23/2001	Anat Caspi	8498-043-999	1530

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EXAMINER

NAKHJAVAN, SHERVIN K

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/993,790

Applicant(s)

CASPI, ANAT

Examiner

Shervin Nakhjavan

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 10, 11 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-9 and 12-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Robb et al. (US 5,568,384).

Regarding claim 1, Robb teaches, limitation of claim 1, a method for registering images, comprising the steps of: receiving a first image and a second image (Column 3, Lines 56-60, where the first image is the base image and second image is the match image), said first image and said second image including three-dimensional data sets (Column 4, Lines 1-9, where the data sets are voxels); globally transforming said second image via a rigid transformation technique (Column 4, Lines 57-59, where the match surface points are the second image points which will transform by rotation or translation; locally transforming said first image via an iterative motion tracking technique (Column 4, Lines 16-23, where base image being the first image is distance transformed or motion compensated and according to column 6, Lines 44-49, the distance transformation is conducted iteratively at different resolution levels); and outputting a registered image (Column 6, Lines 60-63, where the final registered image is output based upon the cost analysis);

limitation of claim 10, said locally transforming said first image and said second image includes the steps of: selecting a set of feature points in said first image (Column 4, Lines 6-11, limited number of point are selected for matching); performing a feature tracking process on each of said set of feature points (Column 5, Lines 43-54, where features are tracked based upon true features within the selected points); and performing a transformation weighting process on each point in said first image that is not a feature point (Column 5, Lines 43-54, where the transformation weight of value or distance of the points with respect to the base image is performed on all the points including the non-feature points inherently and outliers or non-feature points are removed);

limitations of computer programming claims 11 and 20 corresponding to method claims 1 and 10 are taught throughout the teachings of the method claims (Column 3, Lines 62-67).

***Allowable Subject Matter***

3. Claims 2-9 and 12-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the *base* claim and any *intervening* claims. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record specifically Robb et al. does not teach determining set of optimal translation and rotation parameters and performing a transformation on a rescaled second image based on optimal translation and rotation parameters of claims 2 and 12.

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***Other prior art cited***

4. Prior art of record cited and not relied upon is considered pertinent to applicant's disclosure.

The US Patent 6,512,518; US Patent 6,154,518; US Patent 5,956,418 and US patent 5,611,000 are related to applicant's invention as claimed specifically with regards to claims 1 and 11.

***Contact information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shervin Nakhjavan whose telephone number is (703) 306-5916. The examiner can normally be reached on Monday through Friday from 8:00 am to 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706.

**Any response to this action should be mailed to:**

Assistant Commissioner for Patents  
Washington, DC 20231

**Or faxed to:**

(703) 872-9314 for ***formal*** communications, please mark "**EXPEDITED PROCEDURE**"

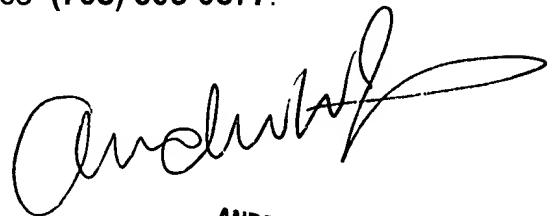
**or:**

for ***informal*** or ***draft*** communications; please label "**PROPOSED**" or "**DRAFT**".

**Hand delivered responses** should be brought to Crystal Park 2, 2121 Crystal drive, Arlington, VA, sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Tech center 2700 customer service office **(703) 306-0377**.

Shervin Nakhjavan *SN*  
Patent Examiner



**ANDREW W. JOHNS  
PRIMARY EXAMINER**

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March 19, 2003.